

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Atty. Docket: SCHUSTER2

In re Application of:)	Conf. No.:	7147
)		
Dr. Thomas SCHUSTER et al.)	Examiner:	L. B. Killman
)		
U.S. Appln. No.: 10/525,392)	Art Unit:	1773
)		
Filed: February 22, 2005)	Washington, D.C.	
)		
For: COPPER-BASED METAL...)		

DECLARATION UNDER 37 CFR 1.132

Customer Window, Mail Stop
Honorable Commissioner for Patents
U.S. Patent and Trademark Office
2011 South Clark Place
Crystal Plaza Two, Lobby, Room 1B03
Arlington, Virginia 22202

Sir:

I, Wolfgang Herzing, hereby solemnly declare as follows:

I have been and remain an employee of the assignee Eckart GmbH & Co. KG since 1990. I have been working and investigating on PVD coatings for the past seven years and I am responsible on the PVD research activities in our company. I live in Rödelbergstr. 2, D-91233 Speikern, Germany, and I am the same Wolfgang Herzing who is a co-inventor of the present invention and a co-applicant of the present application.

I am very familiar and experienced with PVD coatings and I declare the following:

1. Evaporating two materials with different evaporation temperatures according to the prior art from one vessel will make the more volatile component evaporate before the other component starts evaporating at all (Raoult's law). For the copper/zinc system this means that zinc will evaporate before copper does. This results in fractioning: the zinc ratio will be a lot higher in the vapor phase than desired and the deposited layer will not be homogeneous. The result is a variation in color/shade and physical properties which cannot be accepted.

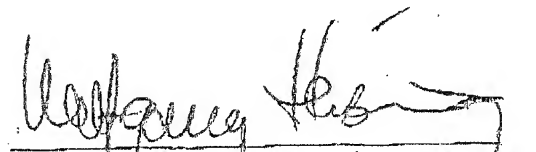
2. Another option for evaporation of two materials according to the prior art is flash evaporation. In this method the material is supplied and evaporated continuously in the desired composition. The material is supplied for example in the form of a wire. As the evaporation temperatures of copper and zinc differ by approximately 1000°C, zinc will evaporate due to radiant heat before it even reaches the evaporation zone.

3. According to our invention of the above-identified application, evaporation takes place individually in evaporators. Only in this way of evaporating out of separate evaporators we have succeeded to prepare pigments

with a copper/zinc alloy which has a defined and more consistent composition of both components, and thus the desired new and remarkable optical properties which could not be obtained up to now according to the prior art.

I hereby further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

By


Mr. Wolfgang Herzing, M.Sc.
Product Group Management

Date:

19.09.07

SN:kg

G:\BN\z\rau\Schuster2\pto\2007-09-07DeclarationUnder37CFR.doc